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ANATOMICAL NOTES ON AN ADULT MALE OF THE DEEP-SEA OPHIDIID FISH *PARABASSOGIGAS GRANDIS* FROM OFF CALIFORNIA

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ABSTRACT: Anatomical notes on a large adult male of the deep-sea ophidiid fish *Parabassogigas grandis* (Günther, 1877), the first known specimen of this species from off California, include description of the lateral-line system, the gill rakers on all arches, and the caudal-fin complex. The median rocker bone, precaudal vertebrae, gas bladder, and associated musculature, presumably constituting the sound-producing mechanism of the adult male, are discussed.

A large fish (1,353 mm in total length, 16.5 kg in weight), collected off the Farallon Islands on 22 September 1952, represents the only known specimen referable to the deep-sea ophidiid *Parabassogigas grandis* (Günther, 1877) from California (Fig. 1).

The fish was collected by commercial fishermen Warren E. Beadle and R. G. Hamilton (aboard their albacore boat, "New Daisy"), who had observed it floating some 40 miles west-southwest of Farallon Lighthouse, a well-known landmark 37 km southwest of Point Bonita at the entrance to San Francisco Bay. The approximate position, computed from U.S. Coast & Geodetic Survey Chart 5002 (1940), was 37°30′N, 123°39′W, where the depth of water is 2,926 m. The weather was flat-calm; the surface temperature of the water was 15.5°C. The fish, which was still bleeding, with "air bubbles" under the skin, had been somewhat mutilated about the belly and dorsal fin by two or three blue sharks (*Prionace glauca*) and albatrosses that were observed "working on the fish." It was dead, presumably as a result of the clogging of its intestine by cestodes.

On 24 September 1952, the fish was presented to the Department of Ichthyology of the California Academy of Sciences (catalog no. 25724). The specimen was recorded by Follett (1970:481).

METHODS

Counts and measurements were taken as by Hubbs and Lagler (1958:19–26). Gill-raker counts include all rudiments, however small. We follow the lepidological terminology of Lagler (1947) and the osteological terminology of

FIGURE 1. *Parabassogigas grandis* (Günther), CAS 25724, standard length 1,270 mm, total length 1,353 mm, weight 16.5 kg, from off the Farallon Islands, California. Photograph by Moulin Studios, San Francisco.

Weitzman (1967). Counts of the median fin rays, and all vertebral characters, are from radiographs. Counts and measurements of the two sides are separated by a diagonal (/).

SYNONYMY

Sirembo grandis GÜNTHER, 1877:437–438 (original description; south of Yeddo [Tokyo], Japan).—JORDAN, TANAKA, AND SNYDER 1913:404 (type-species of *Bassogigas;* reference).

Neobythites grandis: GÜNTHER 1887:100–102, pl. 21, fig. A (redescription; holotype from south of Yedo, near Yokohama, CHALLENGER sta. 237; 1,875 fathoms (3,429 m); [trawled 17 June 1875; 34°37′N, 140°32′E; mud; bottom temp. 35.3°F (1.8°C); surface 73.0°F (22.8°C)]; data in brackets from Thomson 1880:57).—GOODE AND BEAN 1896:329 (reference; compared with *Bassogigas gillii*).—GARMAN 1899:391 (listed). —BRAUER 1906:403 (reference to type-locality).—DOLLO 1906:174, 176 (reference).

Bassogigas grandis: GOODE AND BEAN 1896:529 (type-locality after Günther 1887).—JORDAN AND FOWLER 1902:758–759 (synonymy; description copied).—TANAKA 1908:1, 17–18, pl. 2, figs. 1A–1B (description; 1 specimen; Sagami Sea, Japan).—JORDAN, TANAKA, AND SNYDER 1913:404 (soko-bōzu [bottom priest]; reference; distribution).—NORMAN 1939:86 (comparisons; relationships).—NYBELIN 1948:80, 81 (comparisons; in key).—KAMOHARA 1954:2 (in key).—NYBELIN 1954:67 (distribution).—MATSUBARA 1955:799 (soko-bōzu; distribution).—GREY 1956:207 (synonymy; distribution).

Parabassogigas grandis: NYBELIN 1957:296, 298, 345 (relationships; *Parabassogigas*, new genus, type-species, by original designation, *Sirembo grandis* Günther; type-locality after Günther 1887); fig. 31 (dentition).—EAGLE 1969:1680–1685 (description; 6 specimens off Newport, Oregon, 2,800 m; 1 specimen off Tillamook, Oregon, 2,130 m); fig. 1 (351-mm female); fig. 2 (vomerine and posterior basibranchial tooth patches); figs. 3–7 (left gill arch); figs. 8–9 (angle gill raker).—FOLLETT 1970:481 (caudal-ray count of Calif. Acad. Sci. no. 25724, discussed in this paper, and of Zool. Inst. Univ. Tokyo no. 39255, from off Katsu-ura, Japan).

DESCRIPTION

Measurements.—The following measurements, additional to those noted below, are expressed in millimeters: Standard length 1,270; total length 1,353. Body depth at dorsal origin 300, at anus (posterior edge) 240. Caudal peduncle least depth 13. Body thickness at pectoral base 154. Snout tip to dorsal origin 352, to anal-fin origin 614, to pectoral base (upper end) 252/255, to left pelvic base 184. Anus (posterior edge) to caudal base 698. Head length 237/235. Snout length 72/72. Orbit, horizontal diameter, 22/22. Interorbital width 97. Suborbital least width 31.5/32. Anterior nostrils, least distance between, 44. Posterior nostrils, least distance between, 77. Anterior nostril to posterior nostril 14.5/16. Posterior nostril (upper end) to orbit 14/13. Maxillary length 131/127, depth (greatest fleshy) 28/31. Preopercular groove to end of opercular membrane 61/65. Opercular spine (lower free edge) 28/29. Pectoral length 126/121; pectoral base depth 67/67. Left pelvic outer-ray length 81; inner-ray (tip broken off) width 2.4. Premaxillary tooth-patch length 87/87, width 5/5. Vomerine tooth-patch anteroposterior length 12, width 24. Palatine tooth-patch length 58/54, width 11/11. Dentary tooth-patch length 90/90, width 6/6. Anterior basibranchial tooth-patch length 36, width 10. Posterior basibranchial tooth-patch length 14, width 8. First superior

pharyngeal tooth-patch length 21/21, width 8/8. Inferior pharyngeal tooth-patch length 42/42, width 8/8.

Head.—Head rather short, smooth, with no suggestion of crests; its anterodorsal profile evenly rounded except for a faint convexity at snout. Interorbital strongly convex; its least vertical height above anterodorsal margin of orbit 44 mm. Eye relatively small and far forward, with no externally evident differentiation of iris and pupil. No free orbital rim. Snout barely produced above the large mouth; lower jaw slightly included. No barbels. Premaxillaries only slightly protractile. Maxillary extending 47 mm behind eye. Anterior nostril a low, thick tube; posterior nostril an open, crescentic slit. Anterior nostril separated by a groove, behind and below, from a row of 5 compressed papillae. This groove shallowly connected with a deep sulcus extending to rostral edge, becoming shallow at the edge. Anterior edge of sulcus a scaleless ridge running downward and forward and meeting at an angle of approximately 50° the lateral lobe of a scaleless rim that extends around front of snout. A flaplike papilla concealed under rostral fold opposite sulcus; between this papilla and midline of snout a larger, similar papilla. Membrane of opercle above continuous with an extremely narrow flap extending downward on shoulder girdle to pectoral base; membrane readily apparent near its end, but so reduced in height at midregion as to be scarcely perceptible. Opercular spine simple and deeply embedded, its tip (apparent in a dermal aperture) about 25 mm anterior to fleshy opercular margin. No pseudobranchiae. Behind left 4th gill arch, a slit 49 mm long; behind right, a slit 43 mm long. Gill membranes free from isthmus. Branchiostegals 8 (4 + 4) on each side—this number usual in fishes formerly placed in the Brotulidae, rare among spiny-rayed fishes and their derivatives (Hubbs 1919:70).

Dentition.—Villiform teeth cover the premaxillaries, vomer, palatines, dentaries, anterior and posterior basibranchials, 2nd and 3rd epibranchials, all 3 superior pharyngeals, and the inferior pharyngeals. The individual teeth are bluntly conical, straight or somewhat curved, and of nearly uniform size; the largest is 0.8 mm in height and 0.3 mm in basal diameter. There are approximately 305 teeth in the vomerine tooth patch (Fig. 2, *top*), which resembles a triangle with nearly straight base, slightly concave sides, and parabolic vertex. The inner margin of each palatine tooth patch (Fig. 2, *top*) is concave anteriorly. The basibranchials (Fig. 2, *bottom*) bear two median unpaired tooth patches (a larger anterior and a smaller posterior patch), well separated; they lack the intervening pair that is present in the basibranchials of *Bassogigas* as figured by Nybelin (1957: figs. 25–30, 50). The inferior pharyngeal patches (Fig. 2, *bottom*) are lanceolate, with apex directed posterolaterally. For dimensions of tooth patches, see Measurements.

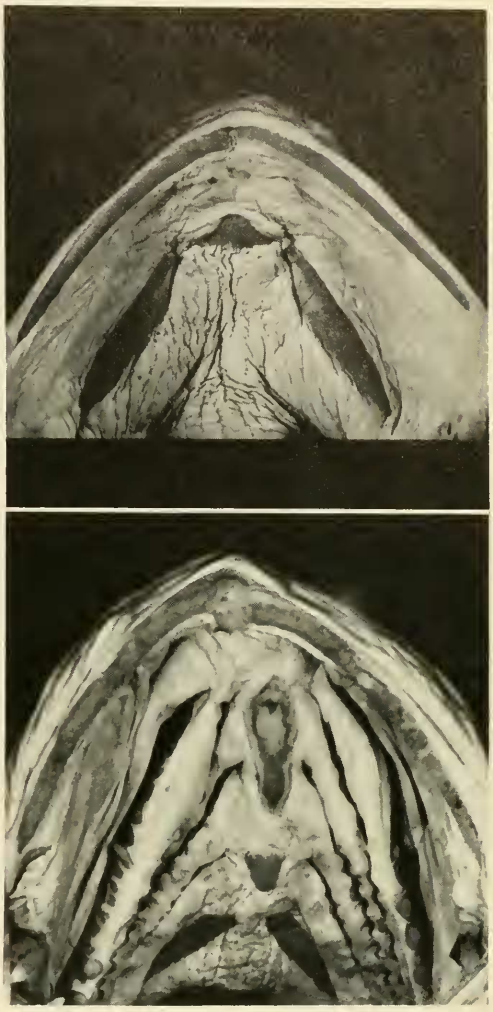

FIGURE 2. Dentition of *Parabassogigas grandis*, CAS 25724. *Top*, premaxillaries, vomer, and palatines. *Bottom*, dentaries, anterior and posterior basibranchials, and inferior pharyngeals. Photographs by W. I. Follett.

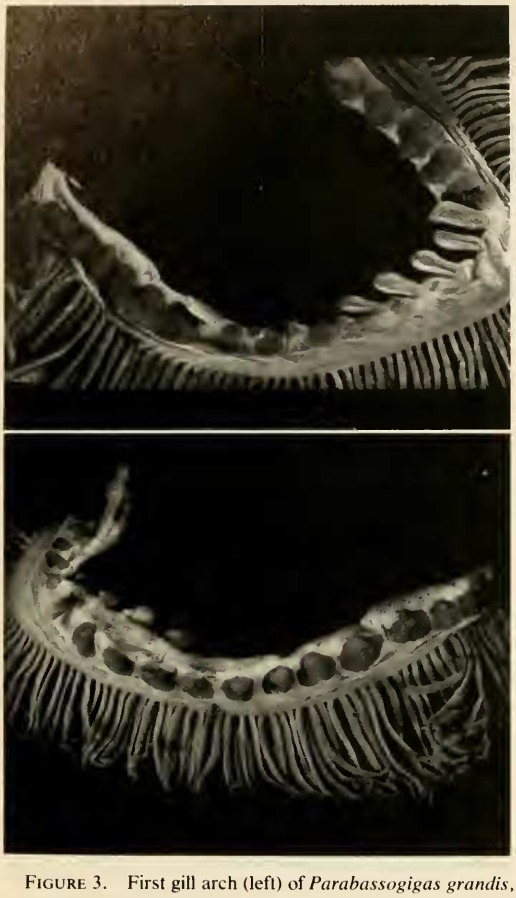

FIGURE 3. First gill arch (left) of *Parabassogigas grandis*, CAS 25724. *Top*, outer (anterior) aspect. *Bottom*, inner (posterior) aspect. Photographs by W. I. Follett.

Gill Rakers.—First arch, outer (anterior) series 5 + 21 / 5 + 20. *Left* (Fig. 3, *top*): On upper limb 5 flat, finely dentigerous plates (5th doubled). On lower limb (including angle) 5 stubby, clavate rakers approximately 11 mm long, 6 mm wide, 4 mm thick (with exceedingly minute bristles on tips), a small plate between 3rd and 4th and 4th and 5th rakers; then 8 structures, varying irregularly from plates of diverse size to rakers, 8th a stubby, clavate raker 9 mm long; then 6 large, more or less fused, finely dentigerous plates, nearly covering arch and forming an even edge opposite bases of gill filaments. *Right:* On upper limb 5 large plates. On lower limb (including angle) 7 stubby, clavate rakers approximately 10 mm long, a small plate in 4th, 5th, and 6th intervals; then 2 larger plates alternating with 2 unequal rakers; then 6 large, more or less fused, finely dentigerous plates.

First arch, inner (posterior) series 4 + 15 / 4 + 16. *Left* (Fig. 3, *bottom*): On upper limb all structures are plates. On lower limb they vary irregularly from plates to rakers; 2nd and 4th to 11th are blunt rakers. *Right:* On upper limb all structures except 4th (a tiny rudiment) are plates. Those on lower limb vary from plates to rakers; 3rd and 5th to 12th are blunt rakers.

Second arch, outer series 5 + 18 / 5 + 18. On this and all subsequent arches all structures (except as noted) are flat plates, closely juxtaposed, nearly covering arch and forming an even edge opposite bases of gill filaments. *Left:* On lower limb 8 blunt rakers alternating with large plates; then 3 blunt rakers grading into plates. *Right:* On lower limb 6 blunt rakers alternating with large plates; then 7 blunt rakers grading into plates.

Second arch, inner series 3 + 17 / 2 + 19. *Left:* On lower limb first 6 structures are blunt rakers alternating with small plates; 3rd, 5th, and 7th to 12th plates are cordate. *Right:* On lower limb 3rd to 8th structures are blunt rakers alternating with small plates; 7th and 9th to 15th plates are cordate.

Third arch, outer series 4 + 16 / 3 + 16. *Left* and *right:* On lower limb 3rd and 5th to 11th structures are blunt rakers or at least somewhat carinate plates.

Third arch, inner series 2 + 12 / 2 + 12. *Left:* On lower limb 4th to 9th plates are cordate. *Right:* On lower limb 4th to 7th plates are cordate.

Fourth arch, outer series 1 + 10 / 2 + 11. *Left* and *right:* On lower limb 2nd to 7th plates are slightly carinate, with blunt tips.

Fourth arch, inner series 0 + 8 / 0 + 7. *Left* and *right:* The plates are somewhat convex distally.

Fifth arch 0 + 7 / 1 + 8. *Left:* On lower limb 7 flat contiguous plates increase in size posteriorly. *Right:* On upper limb is a small raker. On lower limb plates increase in size posteriorly.

Otolith.—The right sagitta (Fig. 4, *top*, lateral aspect; Fig. 4, *bottom*, mesial) is subpentagonal, its dorsal margin slightly concave, its ventral margin strongly convex. It is 12.5 mm long, 10.8 mm high, and 4.2 mm thick. The sulcus comprises the ostium (largely the anterior part of the sulcus) and the cauda (the posterior part of the

sulcus and a narrow elongate area above the ostium). The dorsal margin of the sulcus is nearly a straight line except where the sulcus opens upward at about 45° toward the anterodorsal margin of the sagitta. The ventral margin curves downward to slightly beyond the middle of the sagitta, thence sharply upward to the ventral margin of the cauda (at the stricture). The greatest vertical distance from the dorsal margin of the sagitta to the dorsal margin of the sulcus is 2.8 mm; the distance from the ventral margin of the sulcus to the ventral margin of the sagitta, 5.0 mm. The rounded area below the anterodorsal opening of the sulcus (presulcal trough) constitutes the rostrum.

Fins.—Dorsal rays 137; anal 103; pectoral 27–28; left pelvic 2 (right destroyed); caudal 4 + 4.

Dorsal origin over middle of pectoral. The 1st through 136th dorsal rays at least 5 mm apart at bases; the 136th and the anterior element of the 137th 3.8 mm apart; the two elements counted as the last (137th) ray 1.9 mm apart. The 135th and 136th rays dichotomously branched 2 or 3 times; the two distinct elements of last ray each branched twice.

Anal origin about under base of 40th dorsal ray. Several rays immediately preceding the 101st are broken. The 102nd and the anterior element of the 103rd 4 mm apart; the two elements counted as the last (103rd) ray 3.0 mm apart. Anterior of the two elements of last ray dichotomously branched 2 or 3 times; posterior branched twice.

Pectorals originating behind posterior margin of opercles, subquadrate, relatively short and broad, without produced rays. All rays branched except uppermost and lowest ray of left fin and uppermost and two lowest of right.

Left pelvic (right destroyed) originating 22 mm behind anterior end of cleithrum (11 mm behind posterior end of maxillary, under anterior end of preopercle). Pelvic composed of 2 rays joined for a distance of 25 mm above base. Outer ray 81 mm long, its free tip 56 mm long; part of tip of inner broken off, remaining portion 56 mm long. At point of junction, outer ray 1.3 mm wide; inner 2.4 mm wide.

Caudal fin (Fig. 5) connected with dorsal and anal fins by the interradial membrane. Determination of the number of caudal rays is somewhat arbitrary. The last dorsal element articulating with a neural spine (that of the 55th caudal vertebra) might be regarded as a caudal ray, but is counted as a dorsal element because of the small size (length 0.7 mm) of its base; the last anal element articulating with a haemal spine (that of the 55th caudal vertebra) might also be regarded as a caudal ray, but is counted as an anal element because of the small size (length 0.9 mm) of its base. In contrast, the length of the base of each of the 8 caudal rays is 2.0 mm or more. So interpreted, the caudal fin is perceptibly differentiated from the dorsal and anal fins. The branching of the caudal rays (other than the 1st (uppermost) ray, which is dichotomously branched once) is not regularly dichot-

FIGURE 4. Right sagitta, horizontal diameter 12.5 mm, of *Parabassogigas grandis*, CAS 25724. *Top*, lateral aspect. *Bottom*, mesial aspect. Photographs by W. I. Follett.

FIGURE 5. Caudal fin and adjacent vertebrae of *Parabassogigas grandis*, CAS 25724. Print from radiograph by W. I. Follett.

omous: the 2nd is dichotomously branched 3 to 6 times; the 3rd, 4 or 5 times; the 4th, 4 to 6 times; the 5th, 4 or 5 times; the 6th, 4 to 6 times; the 7th, 3 to 5 times; the 8th, 2 or 3 times. This repeated branching forms a fine fanlike pattern, with the rays barely distinguishable in the distal part of the fin. The 4 rays of each moiety of the caudal fin are contiguous at their enlarged bases. A distinct interspace separates the moieties; the least height of this interspace is 0.7 mm. The 4 rays of the upper moiety articulate with the upper fanlike element of the hypural complex; the 4 rays of the lower moiety articulate with the similar lower hypural element.

Lateral Line.—The lateral line of the body originates one orbital length above the upper end of the gill opening, and can be traced backward to a point opposite the 19th dorsal ray on the left side and the 15th on the right. Farther back, it is scarcely discernible, but it seems to descend to near the middle of the body height above the anus, behind which point it is indistinct. For about 110 mm behind its origin, the lateral line is nearly scaleless.

On the head, the lateral line extends forward very faintly to a point about midway between the upper end of the gill opening and the anterior margin of the eye. From this point a rather prominent line of neuromasts extends vertically downward to about an orbit's length above and behind the upper posterior end of the maxillary, then downward and forward apparently to connect with a line of pores along the rostral edge. From the upper end of the vertical series, a faint line of neuromasts extends upward and forward a short distance, then curves downward and forward behind the eye, and then extends forward to behind the posterior nostril approximately parallel to the margin of the orbit. Then probably the same line extends forward in a strong upward arc to above the anterior nostril. From the point where the line curves downward and forward behind the eye, another line of neuromasts extends upward and forward about half the postorbital length of the head to above the posterior nostril and then is abruptly deflected backward in line with the dorsal contour to above the vertical line on the cheek. From the end of this line, there seem to be a temporal commissure and another line extending toward the origin of the lateral line of the body.

Pores.—On the edge of the snout, below the interval between the tubular and the crescentic nostrils, are two linear pores (6 mm apart), each 4 mm long. About 3 mm above the inferior margin of the suborbital are three smaller pores (about 20 mm apart). The remaining pores of the head are inconspicuous, except one at the angle of the preopercle. The anterior mandibular pore, a 3-mm slit with thick, scaleless margins, begins

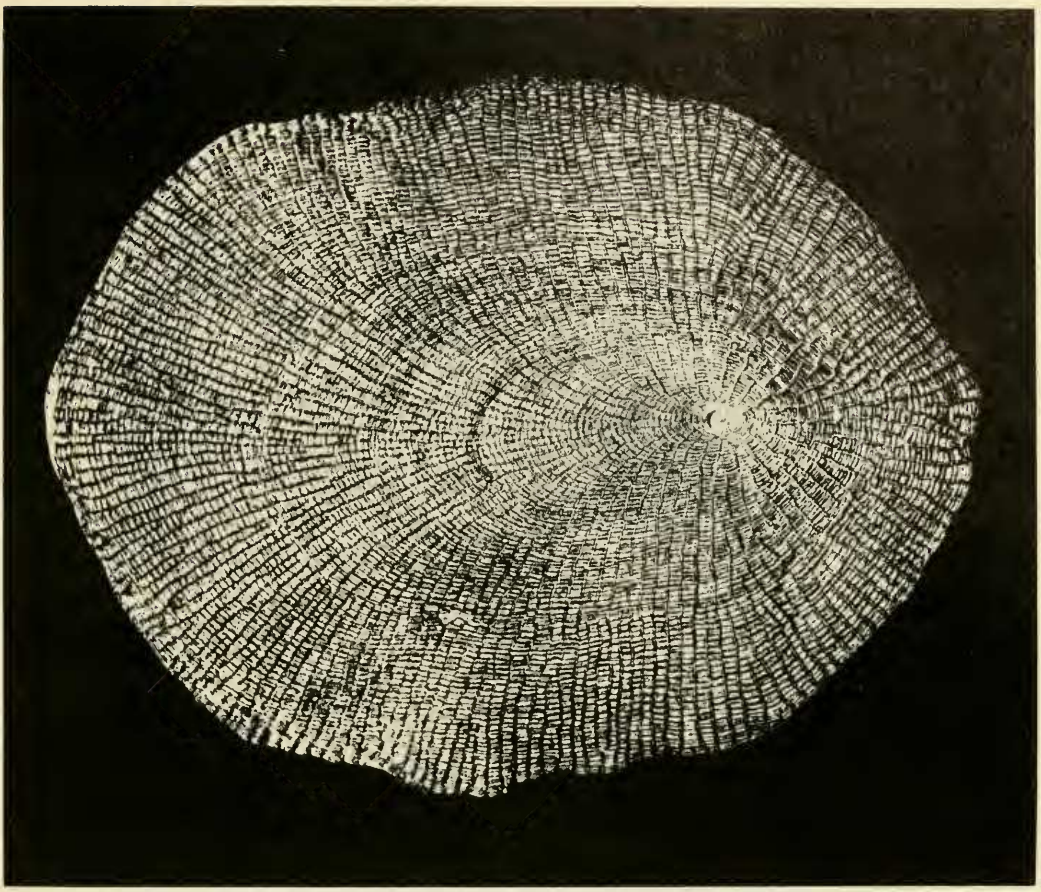

FIGURE 6. Scale, length 6.2 mm, from near the center of the left side of *Parabassogigas grandis*, CAS 25724. Photograph by W. I. Follett.

14 mm from the tip of the mandible and forms the anterior boundary of the scaled area adjoining the symphysis. Directly behind this pore, and extending along the inner margin of the mandible, is a pore 10 mm long with thick, scaleless margins. Following this long pore at intervals of about 49, 32, and 33 mm are three other pores, at distances of about 4, 7, and 11 mm above the inner margin of the mandible. On the left side, the anteriormost of these three is the smallest. The narial sulcus appears to run into two pores internally. Near the head are several large pores in the lateral line, about one to a body segment.

Scales.—Scales 28–216–70/28–216–70. The head and body are covered with scales. Those of the body are cycloid, more or less oval, with slightly undulate margins; they are embedded, not imbricated. Rows of scales, rather indistinct, radiate from the eye. The interorbital, preorbitals, suborbitals, opercles, preopercles, subopercles, interopercles, maxillaries, mandibles, and ventral aspect of the chin are densely scaled. A scale (Fig. 6) from near the center of the left side is 6.2 mm long, with eccentric (anterior) focus, numerous radii in all fields, and fine-set circuli paralleling the scale margin; it has a total of 184 radii, and, in one interradial segment of the posterior field, 112 circuli.

Rocker.—A large median bony plate (Fig. 7), 102 mm in length and 83 mm in greatest width, fills most of the upper part of the anterior half of the body cavity. This element, known only in the ophidioids, has been designated the rocker (Rose 1961:284) or median rocker bone (Courtney 1971:259). The rocker extends downward

FIGURE 7. Median rocker bone, length 102 mm, of *Parabassogigas grandis*, CAS 25724. Two of the enlarged neural spines are visible at the upper left. Print from radiograph by Carl B. Bowen, M.D.

and backward from about the 5th or 6th precaudal vertebra to a point directly below the 12th precaudal; it seems to be a process from the 6th precaudal. The upper surface of the plate is strongly calcified. The broad posterior edge is weakly concave; the lateral edges are strongly convex; the upper surface is concave, rising to a distinct elevation which seems to be suspended from the dorsal wall of the body cavity. Between the rocker and the vertebrae, and presumably supported by parapophyses, there is on each side a large mass of seemingly gelatinous tissue, obliquely truncated posteriorly; the thick mesentery forms the lower margin of this mass.

Musculature.—There is a huge muscle mass on each side of the ventral surface of the rocker. The anterior part of the body cavity is largely filled by an immense mass of muscle extending forward to about opposite the end of the maxillary and backward to about midway between

the isthmus and the anus. This muscle mass is about 130 mm wide, and is divided by a sagittal septum into which a high, firm keel projects from the rocker. This specialized musculature and the associated rocker presumably constitute a part of the sound-producing mechanism of the adult male (cf. Rose 1961:304; Courtney 1971:259).

Gas Bladder.—The gas bladder has an extremely thick wall of fibrous tissue and fills most of the upper-median part of the body cavity above the anterior section. Anteriorly the gas bladder narrows to end near the posterior axil of the rocker. It extends back into the bifid front of the very thick but short kidney, the left lobe of which is much more massive than the right. Wavy light streaks on the surface of the thin-walled abdomen appear to have been caused by excessive inflation of the gas bladder—presumably as the fish rose from a great depth. There are remains of a rather thick fibrous mesentery between the kidney and the gas bladder.

Stomach.—The stomach (which was empty) is a blind sac, with the pylorus behind the middle. There are no pyloric caeca.

Intestine.—The anterior part of the intestine was packed with cestodes; the posterior part was apparently filled with mucus.

Testis.—The testis is a rather elongate, solid body full of tubules; it is extended forward about one-fourth the distance to the pelvic fins, and is incompletely fused toward the posterior end.

Vertebrae.—Vertebrae 23 + 56 = 79. The 4th precaudal centrum is 15 mm in length and 26 mm in vertical diameter; the 13th precaudal centrum is 18 mm in length and 18 mm in vertical diameter; the 55th caudal centrum is 7 mm in length and 4 mm in vertical diameter. The 4th and 5th precaudal centra are expanded, apparently to help support the rocker.

Neural Spines.—The 1st neural spine is 33 mm long, 2.5 mm in anteroposterior thickness at midlength, and nearly vertical. The 2nd, 3rd, and 4th are stout and somewhat blunt. The 2nd is 86 mm long and 7 mm thick; it is slightly sigmoid, and inclined backward at an angle of 65° with the axis of its centrum. The 3rd is 98 mm long, 6 mm thick, nearly straight, and inclined at 55°. The 4th is 83 mm long, 5 mm thick, slightly sigmoid, and inclined at 43°. In marked contrast to these stout spines, the 5th to 12th are slender, with attenuate tips strongly depressed posteriorly. The 9th, for example, is 58 mm long, 1.5 mm thick, and inclined at 32°. The 13th to 16th are nearly straight and progressively longer and stouter. The 17th to 22nd are about 61 mm long, 7 mm thick, and inclined at 60°. Those behind the 22nd are progressively shorter and more slender and are curved backward.

Dorsal Pterygiophores.—There are about 135 dorsal pterygiophores. The 1st is a thin, subcircular disc about 5 mm in diameter, possibly fused with the 2nd. The proximal radial of the 2nd is 70 mm long, and curves downward and forward (as do the 3rd to 18th); those posterior to the 18th are nearly straight. The 1st to 18th proximal radials correspond in position to the slender 5th to 12th neural spines. The 135th proximal radial is about 10 mm long.

Haemal Spines.—The largest (2nd) haemal spine is 103 mm in length and 6 mm in greatest anteroposterior thickness; it is nearly straight and is inclined backward at an angle of 50° with the axis of its centrum. Those behind the 4th are progressively shorter and more slender and are somewhat curved backward.

Anal Pterygiophores.—There are about 103 anal pterygiophores. The 1st proximal radial is 48 mm in length and 0.8 mm in anteroposterior thickness near its base but expanded distally to 2.4 mm. The 2nd to 4th are 57 mm long. Six proximal radials precede the tip of the 1st haemal spine. The 103rd proximal radial is 18 mm long.

Parapophyses.—The 9th to 22nd precaudal vertebrae bear expanded parapophyses; the largest (on the right side of the 19th vertebra) is 56 mm in length and 7 mm in greatest width. These expanded parapophyses partially embrace the large, thick-walled gas bladder.

Ribs.—Measurements (in millimeters) of ribs on left side:

	1st	2nd	3rd	4th	5th	6th	7th
Length	45.0	40.0	85.0	90.0	100.0	105.0	100.0
Width	1.5	1.0	2.5	3.0	3.0	3.0	1.5

Coloration.—When collected, the fish was pinkish orange (Warren E. Beadle, personal communication). Twenty-four hours later, a pinkish cast was still noticeable on the cream-colored head, the pale-tan sides, and the darker posterior region. There was a faint submarginal dark band along the vertical fins, and a faint dark bar across the middle of the pectorals. The lining of the mouth and gill cavity was chalky white,

becoming dusky opposite the opercles. The peritoneum was brown with minute darker specks.

Nomenclature

Parabassogigas grandis, originally described as *Sirembo grandis*, has been referred to four nominal genera: *Sirembo* Bleeker, 1858; *Neobythites* Goode & Bean, 1885; *Bassogigas* Gill *in* Goode & Bean, 1896; and *Parabassogigas* Nybelin, 1957. (See Synonymy.)

We follow Nybelin (1957:298) in referring *Sirembo grandis* to the nominal genus *Parabassogigas*, of which *grandis* is the type-species by original designation.

In referring *Parabassogigas grandis* to the family Ophidiidae, we follow Cohen and Nielsen (in press).

Acknowledgments

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